



# **SPP** *Southwest Power Pool*

***System Impact Study  
SPP-2022-155  
For Transmission Service  
Requested By:  
DYNP***

***From CSWS to ERCOTE***

***For a Reserved Amount Of  
100 MW***

***From 12/21/2022  
To 12/27/2022***

## **1. Executive Summary**

DYNP has requested a system impact study for daily firm transmission service from CSWS to ERCOTE. The period of the transaction is from 12/21/2022 00:00 to 12/27/2022 00:00. The request is for reservation 98549510.

The 100 MW transaction from CSWS has an impact on the following flowgate(s) with no AFC: PSOSWEPCOTIE, PITVALSUNHUG, HUGVALHUGVAL. To provide the AFC necessary for this transfer, the impact on these flowgates must be relieved.

After studying many scenarios using generation redispatch, there are several feasible scenarios that will relieve the flowgate(s) in question.

## **2. Introduction**

DYNP has requested a system impact study for transmission service from CSWS to ERCOTE.

There are three constrained flowgates that require relief for this reservation to be accepted. The flowgates and the explanations are as follows:

- PSOSWEPCOTIE: PSO – SWEPCO Tie.
- PITVALSUNHUG: Pittsburg – Valiant 345kv for the loss of Sunnyside to Hugo 345kV.
- HUGVALHUGVAL: Hugo - Valiant 138kV for the loss of the Hugo - Valiant 345kV.

### **3. Study Methodology**

#### **A. Description**

Southwest Power Pool used Transmission Adequacy & Reliability Assessment (TARA) to obtain possible unit pairings that would relieve the constraint. TARA calculates impacts on monitored facilities for all units within the Southwest Power Pool Footprint. The SPP ATC Calculator is used to determine response factors for the time period of the reservation.

#### **B. Model Updates**

The 2022 Southwest Power Pool model was used for the study. This model was updated to reflect the most current information available.

#### **C. Transfer Analysis**

Using the short-term calculator, the limiting constraints for the transfer are identified. The response factor of the transfer on each constraint is also determined.

The product of the transfer amount and the response factor is the impact of a transfer on a limiting flowgate that must be relieved. With multiple flowgates affected by a transfer, relief of the largest impact may also provide relief of smaller impacts.

Using TARA, specific generator pairs are chosen to reflect the units available for redispatch. The quotient of the amount of impact that must be relieved and the generation sensitivity factor calculated by TARA is the amount of redispatch necessary to relieve the impact on the affected flowgate.

## 4. Study Results

After studying the impacts of the request, three flowgates require relief. The flowgates and associated amount of relief are as follows:

**Table 1**

Flowgate	Duration	Sensitivity (%)	Required Relief (MW)
5578:PSOSWEPCOTIE	12/21/2022 00:00 - 12/27/2022 00:00	44.58%	44.58
5661:PITVALSUNHUG	12/21/2022 00:00 - 12/27/2022 00:00	23.64%	23.64
5691:HUGVALHUGVAL	12/21/2022 00:00 - 12/27/2022 00:00	6.47%	6.47

Table 2 displays a list of generator pairs that are possible relief options for each flowgate in question and the amount of redispatch capacity needed.

**Table 2**

5578:PSOSWEPCOTIE			
Increment	Decrement	Sensitivity	MW
WILKE1-1	ANADRK6	75.52%	59.03
WELSH1-1	ANADRK6	75.52%	59.03
WILKE1-1	MCLN 1S	74.68%	59.70
WELSH1-1	MCLN 1S	74.68%	59.70
WILKE1-1	REDBUD1G	73.97%	60.27
WELSH1-1	REDBUD1G	73.96%	60.27
TURKCOAL-1	ANADRK6	73.55%	60.61
TURKCOAL-1	MCLN 1S	72.70%	61.32
TURKCOAL-1	REDBUD1G	71.99%	61.92

5661:PITVALSUNHUG			
Increment	Decrement	Sensitivity	MW
TURKCOAL-1	MCLN 1S	42.08%	56.18
TURKCOAL-1	ANADRK6	42.00%	56.29
TURKCOAL-1	REDBUD1G	41.71%	56.68
WELSH1-1	MCLN 1S	39.35%	60.07
WILKE1-1	MCLN 1S	39.32%	60.13
WELSH1-1	ANADRK6	39.27%	60.20
WILKE1-1	ANADRK6	39.23%	60.26
WELSH1-1	REDBUD1G	38.98%	60.64
WILKE1-1	REDBUD1G	38.94%	60.70

<b>5691: HUGVALHUGVAL</b>			
<b>Increment</b>	<b>Decrement</b>	<b>Sensitivity</b>	<b>MW</b>
TURKCOAL-1	ANADRK6	11.25%	57.53
WELSH1-1	ANADRK6	10.93%	59.21
WILKE1-1	ANADRK6	10.92%	59.27
TURKCOAL-1	MCLN 1S	10.04%	64.46
WELSH1-1	MCLN 1S	9.72%	66.58
WILKE1-1	MCLN 1S	9.71%	66.65
TURKCOAL-1	REDBUD1G	9.57%	67.64
WELSH1-1	REDBUD1G	9.25%	69.98
WILKE1-1	REDBUD1G	9.24%	70.06

## **5. Conclusion**

Generation redispatch options were studied in order to relieve the necessary constraint(s). The results of this study shows that the constraints on the flowgate(s) in question could be relieved by executing one or more of the options described in the Study Results section of this document.